



Holt-Damant, Kathi (1998) *Space and time in the architecture and theory of Bernard Tschumi*. In: Cooper, Jackie and Beck, Haig, (eds.) UME Magazine. UME, 7. University of Melbourne, Melbourne and Sydney, pp. 48-51.

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Since his days as a unit master at the Architectural Association in London during the 1970s, BernardTschumi has been one of the most significant, provocative and influential contemporary architectural thinkers. Through his teaching, writing and design work, he has been instrumental in changing the way architecture is conceived of. Two fundamental themes are consistently evident throughout his work: space and time. His architectural theory weaves together these central strands, positing them as a dialectical paradox. This chart maps the development of Tschumi’s architectural theory and the wider philosophical context in which this occurs. Typically, there is a coincidence at any given moment between ideas developed through his teaching, his texts, his design projects, and certain current philosophic ideas. The chronological schema set out here formed the basis of two interviews between BernardTschumi and Käthi Holt-Damant at Columbia University, New York in November 1997.

Bernard Tschumi is widely known for his work on deconstruction and his collaborations in this field with Jacques Derrida and Peter Eisenman. His theoretical position ranges across various intellectual disciplines and has been discussed and reviewed by numerous critics. Our aim here is to consider only two aspects of this work: space and time.<sup>1</sup> Paris, May 1968 student revolts From this distance, it is easy to overlook how powerfully the insurrection of May ’68 shaped at least a generation of intellectual thought. Briefly, a large student population found itself in a rigid, conservative education system, without recourse to change. The students revolted, joining workers in a month-long uprising against De Gaulle’s right wing government. They created spontaneous demonstrations and dramatic performance events throughout Paris, often in working buildings such as factories, sheds, schools and universities. Tschumi’s interest in programme, the event/performance and urban spaces is grounded in the ideas and theories emanating from this period. Around 1968, together with many in my generation of younger architects, I was concerned with the need for an architecture that might change society – that could have a political or social effect. Further: any political discussion by

Time Line	1970	1974–1975	
Influences across contemporary movements in philosophy, art, literature, theory, film	Lefebvre Eisenstein Dziga-Vertov	Tel Quel (journal founded in 1960 by Sollers) Sollers (Limits) Kristeva (Inter-text) Genette (Palimpsest) Barthes (Pleasure) Derrida (Deconstruction)	
Reference	Henri Lefebvre, The Production of Space, Blackwell, Oxford, 1993	Louis Marin, Transpositions: On The Intellectual Origins of Tschumi’s Architectural Theory, Assemblage, 11, 1990	
Texts by Tschumi		Questions of Space: The Pyramid and the Labyrinth, Studio International, 9/10 1975, pp136–142	
Teaching	Unit master at the Architectural Association, 1970–1976	Unit master at the Architectural Association	
Projects	Do-It-Yourself-City Project	Manifesto 1 – Fireworks	
Development of space and time theoretical position	Communication technology could provide a new uncontrollable public space. Tschumi, Assemblage, 11, p23	Conceived space (Pyramid) Perceived space (Labyrinth) Experienced space  From the Greek “power of interacting volumes” to the Roman “hollowed-out interior space,” from the modern “interaction between inner and outer space” to the concept of “transparency,” historians and theorists referred to space as a three-dimensional lump of matter. Tschumi, The Architectural Paradox, 1975  The only way to reconcile conceived and perceived spaces was to discover architecture’s eroticism...in other words to reach the point where the subjective experience of space becomes its very concept. Tschumi, Assemblage, 11, p27	

critics and historians about the making of architecture had generally focused on the formal or physical aspects of buildings or cities, rarely raising the questions of the events that took place in them...over the next decade I kept exploring the implications of what had first been intuitions: that there is no cause-and-effect relationship between the concept of space and the experience of space, or between buildings and their uses, or space and the movement of bodies within it.<sup>2</sup> Also significant from this period is the cross-disciplinary discussion, begun in the 1960s, among literary criticism, philosophy, and psychology. The Tel Quel journal founded in 1960 by Philippe Sollers allowed the theory of writing to be extended beyond the boundaries of literature into other disciplines.<sup>3</sup> Indeed the text became the common element across this interdisciplinary theoretical discourse. Academic background Having trained at ETH (Federal Institute of Technology) in Switzerland, in 1970 Tschumi went to teach at the Architectural Association. His familiarity with French philosophic and literary movements informed the courses he taught there, notably Urban Politics and The Politics of Space. Specifically, he drew on techniques laid out by Henri Lefebvre to analyse the contemporary spatial condition of cities.<sup>4</sup>

Lefebvre held that space does not exist free of politics: any definition of space entails a political dimension. This intellectual base was also the starting point for Tschumi’s design teaching as a unit master at the AA. But whereas Lefebvorean analytic techniques describe contemporary urban space, Tschumi now begins extending these tools to project future urban spatial conditions. Underlying themes in Tschumi’s work During the 1960s, there is a shift among some intellectuals away from form- and typology-driven design towards explorations such as Archigram’s of flexible, expandable, loose-fit space. These experimental ideas were highly influential and affected the new generation of students emerging in the 1970s. What is significant about an early design by Tschumi, Do-it-yourself city project (1970), is that space and time assume greater importance than the formal aspects of the design. Although these two themes operate here at their most simplified level, they will subsequently emerge with greater complexity throughout his work. Ideological foundations to ideas of space and time Space and time, far from being stable or static concepts, have been subject to many different philosophical interpretations. To Descartes, for instance,

space was an absolute and objective experience. To Kant, in contrast, space was a more subjective, variable experience, one entailing the senses.<sup>5</sup> To explain Kant’s theory of space and time clearly is not easy, because the theory itself is not clear...Kant holds that the immediate objects of perception are due partly to external things and partly due to our own perceptive apparatus. What appears to us in perception, which he calls a “phenomenon”, consists of two parts: that due to the object, which he calls the “sensation”, and that due to our subjective apparatus, which he calls the form of the phenomenon. This part is not itself sensation, and therefore not dependent upon the accident of environment; it is always the same, since we carry it about with us, and it is a priori in the sense that it is not dependent upon experience. A pure form of sensibility is called pure intuition (Anschauung); there are two such forms namely space and time, one for the outer sense and one for the inner.<sup>6</sup> In the twentieth century, Einstein would reinforce Kant’s notion that space includes the subject (ie, the person experiencing it), with his proposition that things exist not as absolutes but in relative relationships. Much of the French intellectual move-

1 Space and time elicit special interest in the twentieth century. Since World War I and World War II, the unparalleled scale and intensity of urban destruction and demolition have remarkably changed the spaces of cities over brief, condensed periods of time. This, together with developments in science, mathematics, philosophy and art, has meant that architecture has had to confront space and time in new, untraditional and unprecedented ways.

2 Bernard Tschumi, Architecture and Disjunction, The MIT Press, Cambridge, Mass, 1994, pp5, 16

3 The Tel Quel group Sollers (Limits), Hollier (Bataille), Barthes (Pleasure), Kristeva (Inter-text), Genette (Palimpsest), Derrida (Deconstruction), from Louis Marin, Transpositions: On the Intellectual Origins of Tschumi’s Architectural Theory,

1976	1977–1981	1983	1985–1988
	Deleuze Derrida	Deleuze and Guattari (Smooth and Striated space) Lefebvre Derrida (Deconstruction)	
	Gilles Deleuze, Cinema 1: The Movement-Image, 1991 Gilles Deleuze, Cinema 2: The Time-Image, 1995 Gilles Deleuze, Negotiations 1972–1990, Columbia UP, 1990 The Manhattan Transcripts, Academy Editions, London, 1994	Gilles Deleuze and Félix Guattari, A Thousand Plateaus: Capitalism and Schizophrenia, University of Minnesota Press, 1986  Spaces and Events, Architecture and Disjunction, pp141–150	Mark Johnson, The Body in the Mind: The Bodily Basis of Meaning, Imagination and Reason, Chicago/London, 1987  La Case Vide: Folio VII, AA Press, London, 1986 Cinegramme Folie: Le Parc de la Villette, Princeton Architectural Press, 1987
The Institute of Architecture and Urban Studies and Princeton Jaye’s Garden	Princeton and Cooper Union Screenplays	Cooper Union Parc de la Villette, France	Dean of Columbia, 1988– Kansai International Airport, Japan
...architecture is not unlike fireworks, for these “empirical apparitions,” as Adorno puts it, “produce a delight that cannot be sold or bought, that has no exchange value and cannot be integrated in the production cycle.” Tschumi, The Architectural Paradox, 1975	Space Movement Event (also called Action)  Screenplays: Film Noir, 1978	Space Time Programme  Parc de la Villette, France, 1983  There is no space without event...no architecture without programme...Architecture becomes the discourse of events as much as the discourse of spaces. Tschumi, Spaces and Events, p11  We do not think right away of the distance that separates objects from one another. For space is never empty: it always embodies a meaning. The perception of gaps itself brings the whole body into play. Lefebvre, The Production of Space, p154	 Kansai International Airport, Japan, 1988

Assemblage, no 11, MIT Press, Cambridge, Mass, 1990. Also, Henri Lefebvre between 1972–1974 (from discussions with Tschumi, Columbia University, New York, 21/25 November 1997). Gilles Deleuze and Felix Guattari to a much lesser extent.

4 Henri Lefebvre, The Production of Space, trans D Nicholson-Smith, 1991, Blackwell, Oxford, 1993

5 Ibid, pp1, 2

6 Bertrand Russell, A History of Western Philosophy, and its Connection with Political Circumstances from Earliest Times to the Present Day, Allen and Unwin, London, 1947, p739

7 The mechanisation of French culture, in the form of efficient production lines, assembly plants, and workers unions and rights for the masses, was caught up between Marxist/socialist and capitalist philosophy. Refer to Kristin Ross, Fast Cars, Clean Bodies, The De-colonisation of French Culture in 1950s and 1960s, 1996

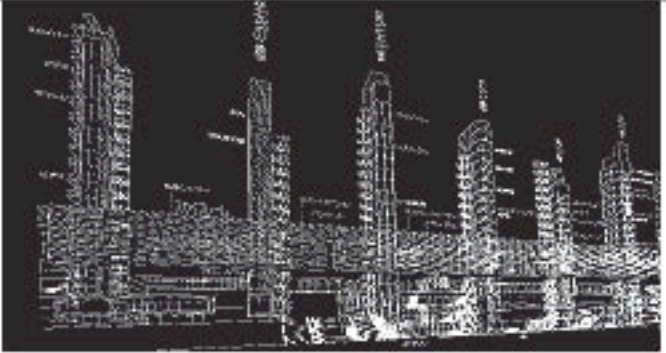
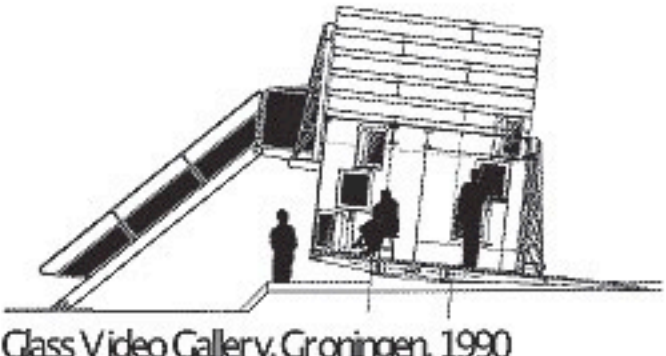

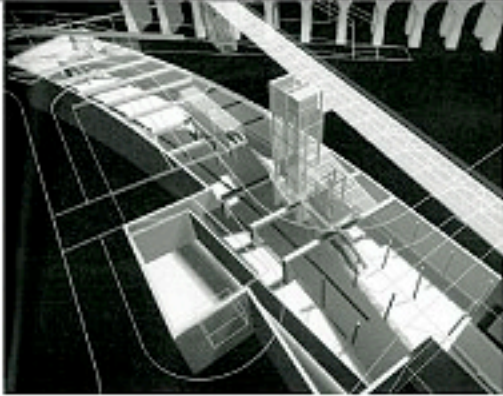

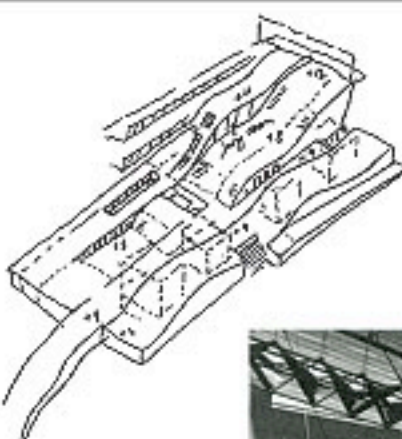


ment of the 1950s and 1960s was grounded in Marxist thinking and influenced by Communist practices (USSR and Mao’s China).<sup>7</sup> As early as 1908, Lenin had attacked the Kantian idea that space was a form of understanding: a subjective view particular to each individual. Lenin raced around defending the objective, material world in absolute space and time that he believed to be the foundation of Marxism, and which, he feared, was threatened by recent developments in mathematics and physics.<sup>8</sup> While Lenin’s fears about relativity in mathematics and physics were latent in Marxist thinking, the subjective views about space described by Einstein in the 1920s were compelling influences on French intellectuals such as the Situationists (Guy Debord, Roland Barthes, etc), who were particularly interested in the subjective experiences of the event, movement and the everyday. Given Bernard Tschumi’s immersion in French philosophic discourse, it not surprising that the dialectic between the objective and subjective views of space would open up in his work. Development of the objective/subjective spatial paradox We do not think right away of the distances that separate objects from one another, for space is never empty; it always embodies a meaning. The

perception of gaps itself brings the whole body into play.<sup>9</sup> In 1974 through his text, Questions of Space: the Pyramid and the Labyrinth, Tschumi explores ways of moving from the production of a formal architecture in space to one dealing with a less absolute definition of space and objects. He sets up a discussion about the conceived space of the Pyramid and the perceived space of the Labyrinth: it is the paradox of architecture to be both Pyramid and Labyrinth. The Pyramid always remains a rational model, positing the object – in distinction to the Labyrinth which remains within the realm of experience, and indicates neither an inside nor an outside. Tschumi here is influenced by Lefebvre, and he uses three Lefebvorean categories of space – the Perceived, the Conceived, and the Experienced – to contrast the objective and subjective experiences of space.<sup>10</sup> These two conditions, objective and subjective, remain in opposition; and in a way they correspond to the objective, or absolute, nature of an object in space versus the subjective experience of objects moving through space. This distinction (although not made by Tschumi) sets up the polarity between an absolute Euclidean space (supported by Marxist philosophy) and the subjective, non-Euclidean spaces of Einstein.

Tschumi continues to explore these two inescapable, polar conditions. Systematically, in the French tradition, he precedes a project with a text or theory. Each strand of exploration maintains a clear set of directives which builds on the previous exploration. Space, Movement, Event In the introduction to Architecture and Disjunction (the book of his essays from 1975–1991), Tschumi states the intention behind these texts: Opposing an over-rated notion of architectural form, they aim to reinstate the term function, and more particularly, to reinscribe the movement of bodies in space, together with the actions and events that take place within the social and political realm of architecture.<sup>11</sup> By the period 1977–1981, the Lefebvorean categories of conceived, perceived, and experienced space are subsumed by Tschumi’s own categories of Space, Movement, and Event, respectively. His analysis deals with both the present condition and also a projected future condition of space. Space, movement and event are first mentioned in The Manhattan Transcripts (1981), an enigmatic presentation of his theoretical concerns that draws on Tschumi’s interest in cinema. The cinematic sequence dictates what the viewer sees: Tschumi explores the cinematic sequence, seeking its correlations with architecture.

Typically he oscillates between highly theoretical, bold notational projects and practice. The Manhattan Transcripts is almost like a script for what he will subsequently attempt to translate into architectural projects. Time and the spatial paradox Although Tschumi does not yet identify or describe time as a part of his concept of architecture, he is dealing with it nonetheless: it is an invisible common denominator incorporated in each of his identified categories – space, movement and event. In 1983, in Spaces and Events (which accompanied an exhibition of his AA students’ work) Tschumi declared: There is no space without event, no architecture without programme. Time is inherent in both event and programme. During this period he was working on the Parc de la Villette, and he now amplifies and enriches his prior triad of space, movement and event with programme, time and space, making the overall idea more complex. After this point, he concentrates consistently on time and space: event occurs through time and in space; movement cannot exist without the object moving through space and in time. The significance of the inbetween Both the dialectical cast of French discourse and deconstruction are funda-



Time Line	1990	1991	1992	1993	1994	1995-97	Books by/on Bernard Tschumi
Influences across contemporary movements in philosophy, art, literature, theory, film				Eisenstein revisited Dziga-Vertov (Deleuze)			
Reference			Stephen Hawking, A Brief History of Time, 1991	Stephen Kern, The Culture of the Time and Space 1880-1918			
Texts by Tschumi		Bent Architecture, Architecture in Transition, Prestal Verlag, Munich, pp134-141		Ten Points - 10 Examples, ANY, 3, pp40-43 Tschumi - Une Architecture en Projet: Le Fresnoy, Centre Georges Pompidou, Paris	Architecture and Disjunction, 1994 Event-Cities (Praxis), MIT Press, Cambridge, Mass, 1994		Bernard Tschumi, The Manhattan Transcripts, Academy Editions, London, 1981, second ed 1994. Presents a reading/writing machine of architecture. They [the transcripts] propose to transcribe an architectural interpretation of reality (p7) or organised through a frame and then viewed through a sequence of frames.
Teaching	Dean of Columbia	Dean of Columbia	Dean of Columbia	Dean of Columbia	Dean of Columbia	Dean of Columbia	Bernard Tschumi, Architecture and Disjunction, The MIT Press, Cambridge, Mass, 1994. Theoretical essays from 1974-1991 on Space, Programme and Disjunction: architecture [s] about two mutually exclusive terms - ... the concept of space and the experience of space. Introduction, p16
Projects	Kyoto railway station, Japan Glass Video Gallery, Groningen, The Netherlands	Le Fresnoy Centre for Contemporary Arts, France	Fireworks/Parc de la Villette, France Bridge, Lausanne, Switzerland Salzburg Convention Centre, Austria		School of Architecture, Marne-la-Vallée, France Lerner Students Centre, Columbia University, New York (with Gruzen Samton)	Interface, Lausanne, Switzerland (with Luca Merlin Architects) K-Polis Department Store, Zurich, Switzerland Invited competition extension to MoMA, New York, USA	Bernard Tschumi, Event-Cities (Praxis), The MIT Press, Cambridge, Mass, 1994. Presents the work of the practice through a conceptual process that is inseparable from the actual making of architecture (p11), dealing with the urban condition (cities) and events (with or without programme).
Development of space and time theoretical position	 Kyoto railway station, Japan, 1990  Glass Video Gallery, Groningen, 1990	Equality between Programme and Space (Event) Architecture as combinations of programmes and spaces Introducing shock strategy as a key to architecture  Simulated night view in the inbetween Le Fresnoy Centre for Contemporary Arts, France  ...between the city of places, and the space of flows is a residual space that ultimately changes its own definition. This residual, non-designed, in-between space can be designated as one of the spaces of the event. Tschumi, Ten Points - 10 Examples, Point 5, ANY, pp40-43	 Bridge, Lausanne, Switzerland  Fireworks/Parc de la Villette, France  Good architecture must be conceived, erected and burned in vain. The greatest architecture of all is the fireworks: it perfectly shows the gratuitous consumption of pleasure Tschumi, Event-Cities, p19	Definition of Electrature Architecture as meeting place between Space/Programme and Space/Event Inbetween...tectonics, electronics Could space and time collapse into one? Activating a Space  The static notions of form and function long favored by architectural discourse need to be replaced by attention to the actions that occur inside and around buildings - to the movement of bodies, to activities, to aspirations; in short, to the properly social and political dimension of architecture... The cause-and-effect relationship sanctified by modernism, by which form follows function (or vice versa) needs to be abandoned in favor of promiscuous collisions of programs and spaces, in which the terms intermingle, combine and implicate one another in the production of a new architectural reality. Tschumi, Event-Cities, p13	 School of Architecture, Marne-la-Vallée, France  Lerner Students Centre, Columbia Uni, NY	Space of the image/Image of the space  K-Polis Department Store, Zurich, Switzerland	Bernard Tschumi, Cinégramme Folie Le Parc de la Villette, Princeton Architectural Press, 1987. Shows the process of a single project from conception to documentation.  Bernard Tschumi, Architecture in/of Motion, NAI Publishers, Netherlands, 1997. Shows the latest projects via computer models arranged in filmic sequences. Jos Barron's introduction focuses on the inbetween condition Tschumi works with, and includes material from Mark Johnson's critical text, The Body in the Mind, The Bodily Basis of Meaning, Imagination and Reason, Chicago, 1987.  Bernard Tschumi, GA Document Extra 10, editor and photographer Yukio Futagawa, ADA Edit, Tokyo, 1997. Includes buildings since La Villette and recent projects, and a long interview between Tschumi and Futagawa.

mental to Tschumi's intellectual method. He remains heavily influenced by the Tel Quel group, and its deconstructionist ideas of fragmentation, palimpsest, collage and the inbetween are inherent in his work.

This condition of the inbetween is very much driven by Derrida's theory of deconstruction. Briefly, from Derrida's texts: Deconstruction locates certain crucial oppositions...such as speech and writing, form and content, theory and practice.<sup>12</sup> The game is to assign one of the pair an ascendancy, and then, subversively, subtly, internally to undermine this position from within the structure that it is lodged (eg, structure and non-structure in the Parc de la Villette, where what might appear structural may in fact be no more than infill). Tschumi operates in this inbetween territory, in the tension that is generated between the dialectics of object and subject, Pyramid and Labyrinth. He does not attempt to solve the paradoxes he poses. Cinema and the spatial paradox Deleuze places great film directors on a par with a society's major artists and thinkers. The great directors of the cinema may be compared...not merely with painters, architects and musicians, but also with thinkers. They think with movement-images and time-images instead of concepts...cinema...forms

part of art and part of thought, in the irreplaceable, autonomous forms which these directors were able to invent [and] get screened...<sup>13</sup> As early as the 1970s, Tschumi had included film and texts in his architectural teaching at the AA. He acknowledges being influenced in particular by Russian film directors, Eisenstein and Dziga-Vertov. Using this cross-disciplinary knowledge/borrowing, he is able to address the spatial objective/subjective paradox that he had earlier defined as a problematic in architecture. He uses three tactics to order the design intentions in his work: frame, sequence and shock. These terms are borrowed from cinema and can best be understood in their original context. Each has a specific reference to space as it is given actuality through the manipulation of time and movement. Cinema presents space and time in a way that makes their relationships visible to the viewer. Frame, sequence, shock The compositional aspects of the cinematic frame relate primarily to space and the relationship of objects to each other within space. Many different sets of spatial relationships may operate within one frame. The limits of a shot define which set of relationships the viewer sees. A collection of shots determines the sequence in which a viewer

sees the sets of spatial relationships. The dialectic between the conceived space of the Pyramid and the perceived space of the Labyrinth is reinscribed in the cinematic experience. Tschumi will henceforth describe his work through cinematic notation, not as text, as previously. In Parc de la Villette, he explores the possibility of the cinematic sequence, which is really the frame with all its attendant technical attributes. He incorporates the device of shock in his idea of event, and subsequently develops the compositional strategies of Eisenstein and Dziga-Vertov architecturally, using filmic notation combining space (set) and time (soundtrack) via text.<sup>14</sup> Eisenstein held that shock is the very form of communication of movement in images.<sup>15</sup> What constitutes the sublime in cinema is that the imagination suffers a shock which pushes it to the limit and forces thought to think the whole as intellectual totality which goes beyond the imagination.<sup>16</sup> In cinema the coordination of these elements - frame, sequence, shock - is governed by the script, a form of textual notation that connects narrative with music in space and time. Tschumi devises a notation for architecture that offers a simultaneous translation of music, space and time. A 1976 studio project he ran at the AA, Joyce's

Garden, was one of the first experiments in this area. It drew on the notation for Eisenstein's film, Alexander Nevsky and Joyce's Finnegans Wake. Ideological discussion about time According to French philosopher Henri Bergson, an important concept of time in cinema resides in the Augustinian notion that measurement is a genuine property of time...and [time] becomes measurable through its strange and incomprehensible contamination by space.<sup>17</sup> Bergson developed this concept in his thesis on perception. He also stated that Movement is distinct from the space covered, and...space is divisible, whilst movement is not. Movement is a translation in space, and always relates to a change. More importantly, he observed that by movement in space, the objects of a set change their respective positions...Sets are in space, and the wholes are in duration.<sup>18</sup> All the technicalities that Bergson worked out, and that Deleuze critiqued, Tschumi uses - although there is no direct relationship operating. Space-time By 1993 Tschumi focuses his enquiries towards the inbetween condition, the locus of the tension operating between the dialectics of object and subject. In Ten Points - 10 Examples,<sup>19</sup> he poses

8 Stephen Kern, The Culture of Time and Space 1880-1918, Harvard University Press, Cambridge, Mass, 1983, p134  
9 Lefebvre, op cit, p154  
10 Hollier's model on the work of Bataille was also used in setting up this paradox. Refer to Louis Marin, Transpositions: On the Intellectual Origins of Tschumi's Architectural Theory. Also from discussions with Tschumi, Columbia University, New York, 21/25 November, 1997.  
11 Tschumi, Architecture and Disjunction, p3  
12 Jacques Derrida, in discussion with Christopher Norris, AD Deconstruction 2  
13 Deleuze, Cinema 1, The Movement-Image, Athlone Press, Minneapolis, 1986, preface  
14 Some of these compositional tactics that Tschumi employs are referred to in his texts as sequence. This corresponds occasionally to the filmic structure of the frame.

15 Deleuze, Cinema 2, The Time-Image, University of Minnesota Press, Minneapolis, 1989, p157  
16 Ibid, p156  
17 Paul Ricoeur, Time and Narrative, trans K McLaughlin and D Pellauer, University of Chicago Press, Chicago and London, vol 3, 1988, pp12-14, 23 (Kant's invisibility of time), and 87  
18 Deleuze, Cinema 1 and 2, pp1, 6, 7, 3, 9, 10, 11.  
19 ANY: Architecture and the Electronic Age, no 3, New York, pp40-43  
20 Stephen Hawkins, A Brief History of Time, Bantam Books, New York, 1991, pp24, 25, 193, 198  
21 Deleuze, Cinema 2, p82

the provocative question: Could space and time be collapsed into one? For science this is a distinct possibility, and in simple terms space-time is defined as a four-dimensional space whose points are events. An event in this instance is something that happens at a particular point in space and at a particular time.<sup>20</sup> In architecture, the merging of space and time is conceivably difficult. The example that both defines and conceals this (in the same paradoxical way that Tschumi earlier describes the Pyramid and the Labyrinth condition) is his experiments with fireworks. In a series of single actions, a specific volume of space is described at a precise point in time. The event is not repeated, nor is there any trace of the event after it has happened. Space is defined by movement in time; time is visible through movement in space, in the instant that the event (fireworks) occurs. With Fireworks he was defining the perimeters of space through an event that held and occupied the entire space within a precise moment in time. In Le Fresnoy, he attempts something analogous. Unlike Fireworks, the space is already defined by the existing structure of the sheds, which contain fragments of past memories. The sheds offer a datum, or an envelope of space into which objects (Pyramids) can be

inserted, setting up many different inbetween zones within the one building. As with Fireworks, events of light and movement - generated through new computer technologies - redefine spaces and sequences. He uses technology to reconfigure the experience of the space, so that it can be understood - through projection, technology, mirrors, programming... Through event, movement in space is realised through the particular instant/duration. Unlike Fireworks, the event can be repeated and can allow an extreme level of subjective interaction. Movement, event, time and space are inextricably linked, and through these elements, programme is realised. The subjective experience of these technology/event-defined spaces creates an ever-changing labyrinth of inbetweens. But where one is expecting the Labyrinth to dominate, the events of technology remain very much objects in a space they also define. Moving through this programme would provide the greatest labyrinthine experience of all, invoking on the one hand the memories of past violence (abattoirs, May 68 events/demonstrations in factory sheds), and on the other hand, the sublime experience of immediate reality. These two conditions, when juxtaposed, create a cinematic situation

described as crystalline time. Crystals of time Crystals of time, developed by Bergson, is the nearest one comes to being able to see time. In cinema, flashbacks are a common tactic, connecting quite separate, unrelated events in time. The shorter the circuit of recollection, the easier the exchange between the actual and the virtual images. The crystal-image is...the point of indiscernibility of the two distinct images, the actual and the virtual, while what we see in the crystal is time itself, a bit of time in the pure state.<sup>21</sup> In Le Fresnoy, Tschumi transfers this crystalline time between the old existing shed-like structure and the new component pieces. The inbetween is occasionally visible, presenting at once reality and memory. A persisting paradox The development and control of space and time present one of the biggest challenges to architecture. Having identified the space-time dialectic and defined its concomitant inbetween zone as a focus for exploration and operation, Tschumi has now begun to put into practice this proposition - the collapsing of space and time into one - in his built works. Tschumi's experiments with space-time in Le Fresnoy yield the closest link yet with cinematic space-time.

Interestingly, it is not through the more controllable cinematic techniques of frame, shot and sequence that space-time is achieved, but rather through the tension that exists between his Pyramid/Labyrinth, object-versus-subject treatise laid out in his establishing years. The compositional attributes of the cinematic frame offer a structure to the position of objects in space. Like a cinematographer, who shows the audience where to look and what to see, Tschumi uses the frame to direct attention to particular spaces and at particular times ( Fireworks, La Villette, Le Fresnoy). The blurring between Tschumi's spatial paradox (Pyramid and Labyrinth) occurs to its fullest extent in Le Fresnoy, where at precise moments in time, and for specific durations, space and time could have indiscernibly collapsed into one - crystals of time. Fireworks managed to remain closer to the realm of the Pyramid (object), with no interference by the spectator (subject) in the event, while Le Fresnoy remains more connected to the subjective experience of the Labyrinth, generating the most interaction between the viewer, space and technology. The tension of the inbetween persists, and Tschumi still faces the challenge of resolving his own paradox: collapsing architectural space-time. This is a refereed text.